

REMARKS

Claims 1-21 are pending in this application. By this Amendment, claims 1, 9, 20 and 21 are amended, and claim 22 is canceled without prejudice to or disclaimer of the subject matter recited therein. Support for amendments in claims 1 and 21 is found in the specification at, for example, page 26, lines 19-23. Support for amendments in claim 9 is found in Fig. 6, for example. No new matter is added. Reconsideration of the application is respectfully requested.

The Office Action rejected claims 20 and 22 under 35 U.S.C. §101 as being directed to non-statutory subject matter. Claim 20 is amended to obviate the rejection, and claim 22 is canceled. Thus, withdrawal of this rejection is respectfully requested.

The Office Action rejects claims 1-4 and 7-22 under 35 U.S.C. §103(a) over U.S. Patent No. 5,966,134 to Arias in view of "Painterly Rendering for Animation," Aug. 4, 1996, SIGGRAPH '96 Conference Proceedings, p. 477-484 by Barbara J. Meier (Meier). This rejection is moot with respect to canceled claim 22 and is respectfully traversed with respect to the remaining claims.

Arias discloses at col. 8, lines 3-13 and lines 31-48 that the object is processed by a modified Toon_Paint material shader, and the resulting color and alpha data for the pixels comprising a frame are written to one or more files. Arias does not teach or suggest that the image of the three-dimensional object is rendered at a display interval to movie-play the retouched image as the animation with still images, as recited in claims 1 and 21.

Meier is directed to the use of brush strokes and does not make any disclosure relating to rendering an image of the three-dimensional object at a display interval to movie-play the retouched image as the animation with still images. Thus, Meier does not overcome this deficiency of Arias.

Further, the Office Action admits that Arias does not teach or suggest "brush images" and asserts that Meier discloses generating at least one of retouched image of the three-dimensional image by arranging a plurality of brush images so as to superpose a part of the plurality of brush images on one another part of the plurality of brush images within a rendering region for the three-dimensional object.

Meier discloses that each brush stroke renders one particle, and that particles are transformed to screen space and sorted in order of their distance from the view point. See second paragraph of section 3. In the seventh paragraph of section 3.2, Meier discloses that brush stroke position comes from the particle's position in screen space. In the eighth paragraph of section 3.2, Meier teaches that the brush image is either used directly or cut from a sheet of texture, multiplied by the color and alpha, scaled by the size, and rotated to the orientation, each as specified in the corresponding reference picture or by data stored with the particle.

However, Meier does not teach or suggest generating at least one of retouched image of the three-dimensional image by arranging a plurality of brush images so as to superpose a part of the plurality of brush images on one another part of the plurality of brush images within a rendering region for the three-dimensional object, as recited in claims 1 and 21. Thus, Applicants respectfully submit that claims 1 and 21 are patentable over Arias and Meier for this further reason.

Claims 2-4 and 7-20 are allowable at least for their dependence on claim 1, as well as for the additional features they recite.

For example, claim 9 recites that the second direction is different from the first direction, that the first light source and the second light source are provided for calculating the normal line, and that a normal image expressing the normal line to the surface of the

three-dimensional object in color information is generated. The amendments to claim 9 are supported in Fig 6, for example.

The Office Action refers to Meier's description of Fig. 3 for the teaching of generating a normal image expressing the normal line to the surface of the three-dimensional object in color information, as recited in claim 9. However, Meier does not teach or suggest using two light sources.

Arias discloses a rendering method which utilizes ray tracing the program. See col. 6, lines 59-66. Arias discloses at col. 7, lines 8-11 that if additional light sources illuminate the object, additional rays are cast to the ray/surface intersection point from the light sources so that the material color is determined by summing the contribution of each light source. However, Arias does not teach or suggest the first light source and the second light source are provided for calculating the normal line or that the light rays emitted from the first light source and the light rays emitted from the second light source are applied to the three-dimensional object when calculating the normal line, as recited in claim 9.

Claim 9 also includes generating normal image by using both the first light source and the second light source. The first light source is set so as to emit light rays in the first direction crossing at a right angle with an eyes line direction of a viewpoint, the viewpoint being used when generating an image of a three-dimensional object. The second light source is set so as to emit light rays in the second direction of the predetermined viewpoint, the second direction being different from the first direction. Meier fails to teach setting light source for generating normal image. Meier fails to disclose how many lights sources should be set, nor a direction of light rays for each of the set light sources. Therefore, claim 9 is not obvious from Meier.

As such, Meier and Arias, alone or in combination, do not disclose or suggest the features as recited in claim 9. Therefore, claim 9 is patentable over the applied references.

Claim 10 recites generating the normal image by the first light source with a first color of RGB and the second light source with a second color of RGB other than the first color. As discussed above, Meier and Arias do not disclose or suggest two light sources, or what color is used for each of the light sources.

At least for these reasons, withdrawal of the rejection of claims 1-4 and 7-21 under 35 U.S.C. §103(a) is respectfully requested.

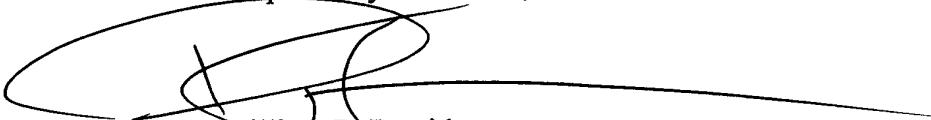
The Office Action rejects claims 5 and 6 under 35 U.S.C. §103(a) over Arias in view of Meier, and further in view of "Computer Vision," Jan. 23, 2001 p. 279-283 by Shapiro et al. (Shapiro). This rejection is respectfully traversed.

Shapiro is directed to image segmentation that discomposes the image into parts for further analysis and to perform a change of representation and does not teach or suggest rendering the image while executing the animation of the image or superposing a part of brush images. Therefore, Shapiro does not overcome the deficiencies of Arias and Meier with respect to claim 1. Thus, claims 5 and 6 are allowable at least for their dependence on claim 1, as well as for the additional features they recite. Withdrawal of the rejection of claims 5 and 6 under 35 U.S.C. §103(a) is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:

Petition for Extension of Time

Date: March 15, 2007

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